

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 April 2005 (28.04.2005)

PCT

(10) International Publication Number
WO 2005/037786 A1

(51) International Patent Classification⁷: **C07D 207/337**,
231/12, 241/12, 307/46, 213/55, 213/56, 401/04, A61K
31/341, 31/402, 31/415, 31/4418, 31/4439, 31/4965, A61P
13/00

(74) Agent: **RUTTER, Keith**; GlaxoSmithKline, Corporate
Intellectual Property (CN925.1), 980 Great West Road,
Brentford Middlesex TW8 9GS (GB).

(21) International Application Number:
PCT/EP2004/011366

(22) International Filing Date: 6 October 2004 (06.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0323585.0 8 October 2003 (08.10.2003) GB

(71) Applicant (for all designated States except US): **GLAXO
GROUP LIMITED** [GB/GB]; Glaxo Wellcome House,
Berkeley Avenue, Greenford Middlesex UB6 0NN (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GIBLIN, Gerard,
Martin, Paul** [GB/GB]; GlaxoSmithKline, New Frontiers
Science Park South, Third Avenue, Harlow Essex CM19
5AW (GB). **HALL, Adrian** [GB/GB]; GlaxoSmithKline,
New Frontiers Science Park South, Third Avenue, Har-
low Essex CM19 5AW (GB). **KILFORD, Ian, Reginald**
[GB/GB]; GlaxoSmithKline, New Frontiers Science Park
South, Third Avenue, Harlow Essex CM19 5AW (GB).
LEWELL, Xiao, Qing [GB/GB]; GlaxoSmithKline, Gun-
nels Wood Road, Stevenage Hertfordshire SG1 2NY (GB).
MILLER, Neil, Derek [GB/GB]; GlaxoSmithKline, New
Frontiers Science Park South, Third Avenue, Harlow Es-
sex CM19 5AW (GB). **NAYLOR, Alan** [GB/GB]; Glaxo-
SmithKline, New Frontiers Science Park South, Third Av-
enue, Harlow Essex CM19 5AW (GB).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

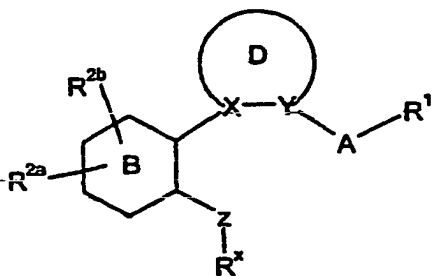
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: HETEROCYCLYL COMPOUNDS



(I)

(57) Abstract: Compounds of formula (I) or a pharmaceutically ac-
ceptable derivative thereof: wherein A, B, D, Z, R¹, R^{2a}, R^{2b}, and R^x
are as defined in the specification, a process for the preparation of such
compounds, pharmaceutical compositions comprising such compounds
and the use of such compounds in treating conditions mediated by the
action of PGE₂ at EP₁ receptors. Such conditions include pain, or in-
flammatory, immunological, bone, neurodegenerative or renal disor-
ders.



WO 2005/037786 A1